




Toonney Alloy(Xiamen) Co.,Ltd.

TOONNEY new products

Strictly selected raw material, original production technology

Add functional element Best material grain size Best heat treatment



Crystal structure

Super high toughness hard metal G serie
Warm forging hard metal GW series

Fracture toughness Fatigue resistant Wear resistance

Tough structure

- The system to control distance between grains
- Cause WC grain carbonized in high temperature
- Solid solution strengthening
- Thick crystalline phase control system
- Fine WC grain
- High strengthening

Grade	Density(g/cm ³)	Hardness(HRA)	TRS(N/mm ²)	Radure Toughness(MPa·m ^{1/2})
G10	12.90	80.5	2640	30
G20	13.24	83.5	2750	25
G30	13.56	85.0	2840	26
G35	13.22	85.7	2950	27
G40	13.10	81.8	2550	28

Mainly metal phase of GW series material is high temperature stable phase, has super good wear resistant and corrosion resistant, solid solution strengthening form a protective wear layer on the metal surface, hence improves the oxidation resistant property.


GW50	13.95	84.5	3270	18
GW70	13.58	83.0	3050	22

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Strictly selected raw material original production technology
Irregular shape machining technology

Solid solution strengthening technology Uniform grain size control system Isostatic pressure control system



Crystal structure

GA series material for progressive die use



Crack resistance Wear resistance Electrical erosion resistance High precision size

The advanced technology of irregular shape machining and isostatic pressure control the size in high precision, shorten the machining time of progressive punching die and improve the cost performance of the material.

Grade	Density(g/cm ³)	Hardness		TRS(N/mm ²)	Radure Toughness (MPa·m ^{1/2})
		HRA	HV		
GA40	14.40	89.0	1400	8000	17
GA50	14.20	90.5	1320	9100	19
GA55	13.85	85.5	953	8000	21
GA60	13.65	84.5	865	2800	24

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Heading die blanks



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Some notes in using Tungsten carbide alloy

- ⚠ Cutting, Grinding processing**

Tungsten carbide alloy is easily to be crack or chip in corner when being punched or over pressed during machining, so please make sure the work piece is fastened in the work table firmly before processing.

Don't use metal hammer when punching on tungsten carbide alloy

TC alloy is not easily to be absorbed by magnet, hence when you use magnet to fasten it, please double check to see whether the work piece is loose or not.

The finished surface of TC products will be very smooth after machining, and very sharp corner, so please take care when carry and use it.
- ⚠ Electro-Discharge Machining, Wire Electro-Discharge Machining**

Tungsten carbide is easily to be crack or collapse in corner in EDM or WEDM, so please adjust the machining process according to products' use condition.

WEDM may cause TC cracking, so please make sure there is no flaw in the machining surface before operating next process.
- ⚠ Welding processing**

Crack may arise during the welding processing, so please make sure there is no damage on the finished surface before operating next process.

If the flying substance(welding iron) adhered to TC alloy, it is easy to leads crack because of rapid heating and then cooling, so please take careful when doing welding.
- ⚠ HIT processing**

Stuffing material may shake or hard metal part may crack while drilling hole or tapping processing, so please make sure all parts are in good conduction after the processing.
- ⚠ All processing**

All machine equipped safety devices should be strictly used in each processing, and workers should wear glasses, gloves, safety shoes and helmet strictly as safety production requires in all processings.

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